

# ETSI TS 102 281 V2.2.1 (2012-10)



**Railways Telecommunications (RT);  
Global System for Mobile communications (GSM);  
Detailed requirements for GSM operation on Railways**

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**Reference**

RTS/RT-00020

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**Keywords**

GSM, GSM-R, R-GSM, UIC

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## Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Railway Telecommunications (RT).

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# 1 Scope

The present document collects all the 3GPP Change Requests (CRs) required for operation of GSM for Railways. It complements EN 301 515 [1].

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# 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

## 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- |     |   |
|-----|---|
| [1] | ETSI EN 301 515 (V2.3.0): "Global System for Mobile communication (GSM); Requirements for GSM operation on railways". |
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## 2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

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# 3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3GPP	Third Generation Partnership Project
CR	Change Request
ASCI	Advanced Speech Call Items
AT	ATtention
BSSAP	Base Station Subsystem Application Protocol
CCWA	Control of Call WAIting
DTMF	Dual-Tone Multi-Frequency
FFN	Follow me Function Node
IMSI	International Mobile Subscriber Identity
NCH	Notification CHannel
OTDI	Originator-To-Dispatcher Information
PCH	Paging CHannel
SMS	Short Message Service
SS	Supplementary Service
SSN	Sub-System Number
VGCS	Voice Group Call Services

## 4 CRs required for operation of GSM on Railways to be added to the normative references of EN 301 515

GSM on Railways is fully specified by all the GSM/3GPP TSs listed as normative references of EN 301 515 [1], clause 2.1, and by all the CRs listed in the present document.

This present clause 4 lists the CRs as well as a short description of each CR.

Table 1 contains the CRs applicable to the TSs already listed as normative references of EN 301 515 [1], while table 2 contains the CRs applicable to TSs not (yet) listed as normative references of EN 301 515 [1].

All the CRs listed here can be found as attachments to the present document.

NOTE: The 3GPP/SMG CR database is the authoritative repository of the status of CRs presented in SMG/3GPP groups. This database can be found at: [http://ftp.3gpp.org/Information/Databases/Change\\_Request/](http://ftp.3gpp.org/Information/Databases/Change_Request/).

### 4.1 CRs applicable to the TSs already listed as normative references of EN 301 515

For each TS listed as a normative reference of EN 301 515 [1], table 1 lists the CRs necessary for GSM R operation. Where a newer version of the TS was produced from that listed in EN 301 515 [1], the table also identifies the latest applicable release 99 version of the TS.

The first and second columns (Index and Specification) of table 1 are identical to the table of clause 2.1 in EN 301 515 [1]. Where the specification has been renumbered in Releases post Rel-99, the corresponding specification for Rel-4 and later is also provided for information.

The third and fourth columns identify the required CRs and their purpose. Where the specification was updated in Release 99 to a later version of that which is listed in EN 301 515 [1], the latest Release 99 version is shown in column 3/4.

**Table 1: CRs required for GSM R operation that are applicable to the TSs already listed as normative references of EN 301 515 [1]**

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[1]	ETSI TS 100 590: "Digital cellular telecommunications system (Phase 2+) (GSM); Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification (GSM 08.08 version 8.5.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 148 008: "Digital cellular telecommunications system (Phase 2+); Mobile Switching Centre - Base Station system (MSC-BSS) interface; Layer 3 specification (3GPP TS 48.008)".	ETSI TS 100 590: "Digital cellular telecommunications system (Phase 2+); Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification (3GPP TS 08.08 version 8.15.0 Release 1999)".	
		CR 149 to 48.008 Rel-6 in GP-050260, approved at GP-23	Group Call Reference handling by the MSC
		CR 151r3 to 48.008 Rel-6 in GP-050855, approved at GP-24	Correction of VGCS uplink seize description
		CR 266 to 48.008 Rel-8 in GP-081196, approved at GP-39	Correction to Uplink Request Confirmation
[2]	ETSI TS 100 607-1: "Digital cellular telecommunications system (Phase 2+) (GSM); Mobile Station (MS) conformance specification; Part 1: Conformance specification (GSM 11.10-1 version 8.2.0 Release 1999)".	ETSI TS 100 607-1: "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification (3GPP TS 11.10-1 version 8.3.0 Release 1999)".	
[3]	ETSI TS 100 929: "Digital cellular telecommunications system (Phase 2+) (GSM); Security related network functions (GSM 03.20 version 8.0.0 Release 1999)".	ETSI TS 100 929: "Digital cellular telecommunications system (Phase 2+); Security-related network functions (3GPP TS 03.20 version 8.6.0 Release 1999)".	

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[4]	ETSI TS 100 933: "Digital cellular telecommunications system (Phase 2+) (GSM); Voice Group Call Service (VGCS); Stage 2 (GSM 03.68 version 8.2.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 143 068: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS); Stage 2 (3GPP TS 43.068)".	ETSI TS 100 933: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS); Stage 2 (3GPP TS 03.68 version 8.6.0 Release 1999)".	
		CR A023 to TS 03.68 Rel-4 in P-00-255, approved at SMG#32	Introduction of OTDI (Originator-To-Dispatcher Information into VGCS)
		CR 007 to TS 43.068 Rel-5 in NP-020383, approved at CN#17	ASCI VGCS call termination by dispatchers using DTMF
		CR 008r4 to TS 43.068 Rel-5 in NP-020675, approved at CN#18	MS late entry notification
		CR 009r1 to TS 43.068 Rel-4 in NP-030408, approved at CN#21	Correction of uplink release management
		CR 013r1 to TS 43.068 Rel-5 in NP-030409, approved at CN#21	Correction to MS Late Entry description
		CR 014r2 to TS 43.068 Rel-6 in NP-030410, approved at CN#21	Dispatcher signalled mute/unmute of talkers downlink and correction and update of incorrect implementation of CR 03.68 A022
		CR A0017 to 43.068 Rel-4 in NP-040373, approved at CN#25	Correction on notification for first talker of VGCS call Correction on notification for first talker of VGCS call Correction on notification for first talker of VGCS call
		CR A0029 to 43.068 Rel-4 in NP-050067, approved at CN#27	Correction of the conditions for establishment of a voice group call
		CR A0036 to 43.068 Rel-6 in NP-050076, approved at CN#27	Inter-PLMN Group Call notification for dispatchers
		CR 46r1 to 43.068 Rel-6 in CP-050361, approved at CP-29	Clarification of the role of the anchor MSC.
		CR 68 to 43.068 Rel-7 in CP-050549, approved at CP-30	Editorial corrections (corrections of misspelling, grammatical errors, etc.)
		CR 72r2 to 43.068 Rel-6 in CP-060113, approved at CP-31	Correction of muting/un-muting procedure
		CR 76r1 to 43.068 Rel-7 in CP-060122, approved at CP-31	Modification of conditions for VGCS call establishment
		CR 80r1 to 43.068 Rel-7 in CP-060122, approved at CP-31	Corrections and clarifications to the procedures for releasing the calling service subscribers dedicated connection to the anchor MSC
		CR 81r1 to 43.068 Rel-7 in CP-060122, approved at CP-31	Correction/ clarification of voice group call termination procedures

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
		CR 85 to 43.068 Rel-7 in CP-060272, approved at CP-32	Add signalling flow for a dispatcher originated VGCS
		CR 94 to 43.068 Rel-7 in CP-060276, approved at CP-32	Correction of Figure 6
		CR 97r2 to 43.068 Rel-7 in CP-060464, approved at CP-33	Failure cases during VGCS call establishment
		CR 128 to 43.068 Rel-6 in CP-070131, approved at CP-35	Definition of BSSAP procedure for release of VGCS call controlling connections
		CR 131r1 to 43.068 Rel-7 in CP-070376, approved at CP-36	Silent (re-)joining dispatcher, immediately talking dispatcher
		CR 133 to 43.068 Rel-8 in CP-070371, approved at CP-36	Definition of BSSAP procedure for release of VGCS call controlling connections
		CR 141 to 43.068 Rel-8 in CP-070604, approved at CP-37	Correction to process VGCS_Handling_Relay_MSC
		CR 145r1 to 43.068 Rel-7 in CP-080123, approved at CP-39	Clean up of the requirement of sending SMS to non established group calls
		CR 147r1 to 43.068 Rel-8 in CP-080129, approved at CP-39	Clarification of the channel to be used for uplink access
		CR 150 to 43.068 Rel-8 in CP-080361, approved at CP-40	Clarification of conditions for start and stop of voice inactivity timer
		CR 148 to 43.068 Rel-8 in CP-080136 (C1-080453/RT-08010r1), approved at CP-39	Warning tone for call termination due to time out of voice inactivity time
[5]	ETSI TS 100 934: "Digital cellular telecommunications system (Phase 2+) (GSM); Voice Broadcast Service (VBS); Stage 2 (GSM 03.69 version 8.2.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 143 069: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast service (VBS); Stage 2 (3GPP TS 43.069)".	ETSI TS 100 934: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS); Stage 2 (3GPP TS 03.69 version 8.5.0 Release 1999)".	
		CR A016 to TS 03.69 Rel-4 in P-00-255, approved at SMG#32	Introduction of OTDI (Originator-To-Dispatcher Information into VBS)
		CR 006 to TS 43.069 Rel-5 in NP-020383, approved at CN#17	ASCI VBS call termination by dispatchers using DTMF
		CR 007r4 to TS 43.069 Rel-5 in NP-020676, approved at CN#18	MS late entry notification
		CR 010r1 to TS 43.069 Rel-5 in NP-030409, approved at CN#21	Correction to MS Late Entry description
		CR A0012 to 43.069 Rel-4 in NP-040373, approved at CN#25	Correction on notification procedures for Originator of VBS call
		CR A0023 to 43.069 Rel-6 in NP-050076, approved at CN#27	Inter-PLMN Broadcast Call notification for dispatchers



Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
		CR 29r1 to 43.069 Rel-7 in CP-060162, approved at CP-31	Correction/ clarification of voice broadcast call release procedures
		CR 77r2 to 43.069 Rel-7 in CP-060126, approved at CP-31	Modification of conditions for VBS call establishment
		CR 79 to 43.069 Rel-7 in CP-060276, approved at CP-32	Add signalling flow for a dispatcher originated VBS
		CR 81r1 to 43.069 Rel-7 in CP-060276, approved at CP-32	Including IMSI in Send_Group_Call_End_Signal message for VBS
		CR 82 to 43.069 Rel-7 in CP-060276, approved at CP-32	Correction to process VBS_Handling_Relay_M SC
		CR 86r1 to 43.069 Rel-7 in CP-060506, approved at CP-33	Failure cases during VBS call establishment
		CR 88 to 43.069 Rel-6 in CP-060457, approved at CP-33	Correction of PCH re-organisation notification
		CR 104 to 43.069 Rel-6 in CP-070131, approved at CP-35	Definition of BSSAP procedure for release of VBS call controlling connections
[6]	ETSI TS 100 948: "Digital cellular telecommunications system (Phase 2+) (GSM); Group Call Control (GCC) protocol (GSM 04.68 version 8.1.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 144 068: "Digital cellular telecommunications system (Phase 2+); Group Call Control (GCC) protocol (3GPP TS 44.068)".	CR A025 to TS 04.68 Rel-4 in P-00-255, approved at SMG#32	Introduction of OTDI (Originator-To-Dispatcher Information into VGCS)
		CR 001 to TS 44.068 Rel-4 in NP-000449, approved at NP#09	The repetition of the priority in the Call Reference IE in the SETUP message
		CR 002 to TS 44.068 Rel-4 in NP-010269, approved at CN#12	Clarification of the coding of OTDI information in IA5 format
		CR 12 to 44.068 Rel-7 in CP-060506, approved at CP-33	Increase VGCS setup timeout (MS timer TMM-est)
[7]	ETSI TS 100 949: "Digital cellular telecommunications system (Phase 2+) (GSM); Broadcast Call Control (BCC) protocol (GSM 04.69 version 8.1.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 144 069: "Digital cellular telecommunications system (Phase 2+); Broadcast Call Control (BCC) protocol (3GPP TS 44.069)".	CR A022 to TS 04.69 Rel-4 in P-00-255, approved at SMG#32	Introduction of OTDI (Originator-To-Dispatcher Information into VBS)
		CR 001 to TS 44.069 Rel-4 in NP-000449, approved at CN#9	The repetition of the priority in the Call Reference IE in the SETUP message
		CR 002 to TS 44.069 Rel-4 in NP-010269, approved at CN#12	Clarification of the coding of OTDI information in IA5 format
		CR 5 to 44.069 Rel-7 in CP-060506, approved at CP-33	Increase VBS setup timeout (MS timer TMM-est)
[8]	ETSI TS 100 977: "Digital cellular telecommunications system (Phase 2+) (GSM); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (GSM 11.11 version 8.3.0 Release 1999)".	ETSI TS 100 977: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (3GPP TS 11.11 version 8.14.0 Release 1999)".	

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[9]	ETSI EN 300 918: "Digital cellular telecommunications system (Phase 2+) (GSM); General on supplementary services (GSM 02.04 version 7.1.2 Release 1998)".	ETSI TS 122 004: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); General on Supplementary Services (3GPP TS 22.004 version 3.3.0 Release 1999)". CR010 to TS 22.004 Rel-4 in SP-040283, approved at SA#24	Modification of table A.1 required to remove wrong SS applicability to Voice Group Services
[10]	ETSI TS 122 030: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Man-Machine Interface (MMI) of the User Equipment (UE) (3G TS 22.030 version 3.3.0 Release 1999)".	ETSI TS 122 030: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Man-Machine Interface (MMI) of the User Equipment (UE) (3G TS 22.030 version 3.4.0 Release 1999)".	
[11]	ETSI EN 301 702: "Digital cellular telecommunications system (Phase 2+) (GSM); User-to-User Signalling (UUS); Service description, Stage 1 (GSM 02.87 version 7.1.2 Release 1998)".	ETSI TS 122 087 "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); User-to-User Signalling (UUS); Service description - Stage 1 (3G TS 22.087 version 3.1.0 Release 1999)".	
[12]	ETSI TS 122 094: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Follow Me Service description - Stage 1 (3G TS 22.094 version 3.1.0 Release 1999)".	CR003 to TS 22.094 Rel-6 in SP-030699, approved at SA#22	Notify of forced erasure to initiating subscriber A
[13]	ETSI TS 100 932: "Digital cellular telecommunications system (Phase 2+) (GSM); enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 2 (3GPP TS 03.67 version 7.1.0 Release 1998)".	ETSI TS 123 067: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Enhanced Multi-Level Precedence and Preemption Service (EMLPP); Stage 2 (3GPP TS 23.067 version 3.3.0 Release 1999)".	
[14]	ETSI EN 301 710: "Digital cellular telecommunications system (Phase 2+) (GSM); User-to-User Signalling (UUS); Stage 2 (GSM 03.87 version 7.0.2 Release 1998)".	ETSI TS 123 087: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); User-to-user signalling (UUS) Supplementary Service - Stage 2 (3GPP TS 23.087 version 3.1.0 Release 1999)".	
[15]	ETSI TS 123 094: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Follow-Me (FM); Stage 2 (3GPP TS 23.094 version 3.2.0 Release 1999)".	CR003r1 to TS 23.094 Rel-6 in NP-030517, approved at CN#22	Notify of forced erasure to previously registered subscriber of his deregistration
[16]	ETSI EN 300 940: "Digital cellular telecommunications system (Phase 2+) (GSM); Mobile radio interface layer 3 specification (GSM 04.08 version 6.3.1 Release 1997)".	ETSI TS 124 008: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Mobile radio interface Layer 3 specification; Core network protocols; Stage 3 (3GPP TS 24.008 version 3.2.0.0 Release 1999)".	
[17]	ETSI TS 100 950: "Digital cellular telecommunications system (Phase 2+) (GSM); Mobile radio interface layer 3 supplementary services specification; Formats and coding (GSM 04.80 version 7.0.1 Release 1998)".	ETSI TS 124 080: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Mobile radio layer 3; supplementary service specification; Formats and coding (3GPP TS 24.080 V3.7.1 Release 1999)".	
[18]	ETSI EN 301 711: "Digital cellular telecommunications system (Phase 2+) (GSM); User-to-User Signalling (UUS); Stage 3 (GSM 04.87 version 7.0.2 Release 1998)".	ETSI TS 124 087: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); User-to-User Signalling (UUS) Supplementary Service - Stage3 (3G TS 24.087 version 3.0.0 Release 1999)".	

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[19]	ETSI TS 100 916: "Digital cellular telecommunications system (Phase 2+); AT command set for GSM Mobile Equipment (ME) (3GPP TS 07.07 version 6.5.0 Release 1997)".	ETSI TS 127 007: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; AT command set for User Equipment (UE) (3GPP TS 27.007 V3.14.0 Release 1999)".	
		CR 43 to TS 27.007 Rel-4 in TP-000144, approved at T#09	Introduction of a new AT command+CUUS1 to manage User-to-User Information element
		CR 044 to TS 27.007 Rel-4 in TP-000144, approved at T#09	Indication of priority and/or sub-address in the unsolicited result code CCWA
		CR 045 to TS 27.007 Rel-4 in TP-000144, approved at T#09	eMLPP SIM Commands
		CR 046 to TS 27.007 Rel-4 in TP-000144, approved at T#09	VBS, VGCS SIM Commands
		CR 047 to TS 27.007 Rel-4 in TP-000144, approved at T#09	Extension of dial command for VBS and VGCS
[20]	ETSI TS 129 002: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Mobile Application Part (MAP) specification (3G TS 29.002 version 3.5.2 Release 1999)".	ETSI TS 129 002: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Mobile Application Part (MAP) specification (3GPP TS 29.002 version 3.20.0 Release 1999)".	
		CR 814 to 29.002 Rel-7 in CP-060316, approved at CP-32	SSN for FFN
[21]	ETSI EN 300 925: "Digital cellular telecommunications system (Phase 2+) (GSM); Voice Group Call Service (VGCS) - Stage 1 (GSM 02.68 version 7.0.2 Release 1998)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 142 068: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS); Stage 1 (3GPP TS 42.068)".	ETSI TS 100 925: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS); Stage 1 (3GPP TS 02.68 version 8.2.1 Release 1999)".	
		CR A013 to TS 02.68 Rel-4 in P-00-304, approved at SMG#32	Introduction of Originator-to-dispatcher information into VGCS
		CR 19 to 42.068 Rel-7 in SP-060026, approved at SP-31	Modification to setup to remove the need for full conditions
		CR 33 to 42.068 Rel-8 in SP-060774, approved at SP-34	Correction on the use of "listener" and "talker"
		CR 37r1 to 42.068 Rel-8 in SP-070645, approved at SP-37	Clarification of interactions with supplementary and other GSM services

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[22]	ETSI EN 300 926: "Digital cellular telecommunications system (Phase 2+) (GSM); Voice Broadcast Service (VBS) - Stage 1 (GSM 02.69 version 8.0.1 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 142 069: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS); Stage 1 (3GPP TS 42.069)".	ETSI TS 100 926: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS); Stage 1 (3GPP TS 02.69 version 8.2.0 Release 1999)". CR A014 to TS 02.69 Rel-4 in P-00-304, approved at SMG#32 CR 6 to 42.069 Rel-7 in SP-060028, approved at SP-31 CR 8 to 42.069 Rel-8 in SP-060775, approved at SP-34 CR 10r1 to 42.069 Rel-8 in SP-070644, approved at SP-37	Introduction of Originator-to-dispatcher information into VBS Modification to setup to remove the need for full conditions Correction on the use of listening service subscriber Clarification of interactions with supplementary and other GSM services
[23]	ETSI EN 300 904: "Digital cellular telecommunications system (Phase 2+) (GSM); Bearer Services (BS) supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.02 version 6.1.1 Release 1997)".	ETSI TS 122 002: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN) (3GPP TS 22.002 version 3.6.0 Release 1999)".	
[24]	ETSI TS 100 905: "Digital cellular telecommunications system (Phase 2+) (GSM); Teleservices supported by a GSM Public Land Mobile Network (PLMN) (GSM 02.03 version 7.0.0 Release 1998)".	ETSI TS 122 003: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Circuit Teleservices supported by a Public Land Mobile Network (PLMN) (3GPP TS 22.003 v.3.3.0 Release 1999)".	
[25]	ETSI EN 300 919: "Digital cellular telecommunications system (Phase 2+) (GSM); Types of Mobile Stations (MS) (GSM 02.06 version 7.0.1 Release 1998)".		
[26]	ETSI TS 100 906: "Digital cellular telecommunications system (Phase 2+) (GSM); Mobile Stations (MS) features (GSM 02.07 version 7.1.0 Release 1998)". <i>Note: TS 02.07 abandoned in Rel-99: the text was transferred to TS 22.001 and TS 22.101.</i>	ETSI TS 122 001: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Principles of Circuit Telecommunication Services supported by a Public Land Mobile Network (PLMN) (3G TS 22.001 v.3.2.0 Release 1999)". ETSI TS 122 101: "Universal Mobile Telecommunication System (UMTS); Service Aspects; Service Principles (3GPP TS 22 101 v.3.17.0 Release 1999)".	
[27]	ETSI EN 300 924: "Digital cellular telecommunications system (Phase 2+) (GSM); enhanced Multi-Level Precedence and Pre-emption service (eMLPP) - Stage 1 (GSM 02.67 version 7.0.1 Release 1998)".	ETSI EN 122 067: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); enhanced Multi Level Precedence and Pre emption service (eMLPP) Stage 1 (3G TS 22.067 version 3.0.1 Release 1999)".	
[28]	ETSI TS 100 625: "Digital cellular telecommunications system (Phase 2+) (GSM); Unstructured Supplementary Service Data (USSD) - Stage 1 (GSM 02.90 version 7.0.0 Release 1998)".	ETSI TS 122 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 1 (3G TS 22.090 version 3.1.0 Release 1999)".	
[29]	ETSI TS 100 522: "Digital cellular telecommunications system (Phase 2+) (GSM); Network architecture (GSM 03.02 version 7.1.0 Release 1998)".	ETSI TS 123 002: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Network Architecture (3GPP TS 23.002 version 3.6.0 Release 1999)".	
[30]	ETSI TR 101 631: "Digital cellular telecommunications system (Phase 2+) (GSM); Technical performance objectives (GSM 03.05 version 8.0.0 Release 1999)".		

Identification of the specifications as per clause 2.1 of EN 301 515 [1]		Applicable CRs and/or latest release 99 version	
Index	Specification	Applicable CR	Purpose
[31]	ETSI TS 100 549: "Digital cellular telecommunications system (Phase 2+) (GSM); Unstructured Supplementary Service Data (USSD) - Stage 2 (GSM 03.90 version 7.0.0 Release 1998)".	ETSI TS 123 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 2 (3GPP TS 23.090 V3.2.0 Release 1999)".	
[32]	ETSI EN 300 947: "Digital cellular telecommunications system (Phase 2+) (GSM); enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 3 (GSM 04.67 version 7.0.1 Release 1998)".	ETSI TS 124 067: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); enhanced Multi-Level Precedence and Pre-emption service (eMLPP) - Stage 3 (3GPP TS 24.067 V3.2.0 Release 1999)".	
[33]	ETSI EN 300 957: "Digital cellular telecommunications system (Phase 2+) (GSM); Unstructured Supplementary Service Data (USSD); Stage 3 (GSM 04.90 version 7.0.1 Release 1998)".	ETSI TS 124 090: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Unstructured Supplementary Service Data (USSD) - Stage 3 (3G TS 24.090 version 3.0.0 Release 1999)".	
[34]	ETSI EN 300 952: "Digital cellular telecommunications system (Phase 2+) (GSM); Call Forwarding (CF) supplementary services; Stage 3 (GSM 04.82 version 7.0.2 Release 1998)".	ETSI TS 124 082: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); Call Forwarding (CF) supplementary services - Stage 3 (3G TS 24.082 version 3.0.0 Release 1999)".	
[35]	ETSI EN 300 910: "Digital cellular telecommunications system (Phase 2+) (GSM); Radio transmission and reception (GSM 05.05 version 6.7.1 Release 1997)".	ETSI TS 100 910: "Digital cellular telecommunications system (Phase 2+) (GSM); Radio transmission and reception (3GPP TS 05.05 version 8.20.0 Release 1999)".	
[36]	ETSI TS 101 267: "Digital cellular telecommunications system (Phase 2+) (GSM); Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (GSM 11.14 version 8.3.0 Release 1999)".	ETSI TS 101 267: "Digital cellular telecommunications system (Phase 2+); Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (3GPP 11.14 version 8.18.0 Release 1999)".	

## 4.2 CRs applicable to TSs not yet listed as normative references of EN 301 515

Table 2 lists the CRs necessary for GSM R operation that are applicable to TSs not (yet) listed in EN 301 515 [1].

**Table 2: CRs required for GSM R applicable to TSs not yet listed as normative references of EN 301 515**

Identification of the specifications impacted by RT-specific CRs not (yet) listed in clause 2.1 of EN 301 515 [1]		Additional CRs or new version of release 99 specification required	
Index	Specification	CR identification in addition to the TS	Purpose
51	ETSI TS 100 930: "Digital cellular telecommunications system (Phase 2+); Functions related to Mobile Station (MS) in idle mode and group receive mode; (3GPP TS 03.22 v.8.7.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 143 022: "Digital cellular telecommunications system (Phase 2+); Functions related to Mobile Station (MS) in idle mode and group receive mode (3GPP TS 43.022)".	CR 24r4 to 43.022 Rel-8 in GP-071519, approved at GP-35	Enhanced Cell Reselection for VGCS
52	ETSI TS 101 503: "Digital cellular telecommunications system (Phase 2+) Mobile radio interface layer 3 specification; Radio Resource Control (RRC) Protocol (3GPP TS 04.18 v.8.27.0 Release 1999)". <i>For information, becoming in Rel-4 and later:</i> ETSI TS 144 018: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol (3GPP TS 44.018)".	CR 659r1 to 44.018 Rel-8 in GP-080353, approved at GP-37	Inclusion of Priority Uplink Access in Notification/NCH
		CR 685 to 44.018 Rel-8 in GP-081194, approved at GP-39	Correction to format of SI10ter message

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## Annex A (informative): Bibliography

ETSI TR 121 900: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Technical Specification Group working methods (3GPP TR 21.900)".

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## History

Document history		
V1.0.0	September 2004	Publication as TR 102 281
V2.0.0	May 2006	Publication as TR 102 281
V2.1.0	June 2010	Publication
V2.2.0	December 2011	Publication
V2.2.1	October 2012	Publication